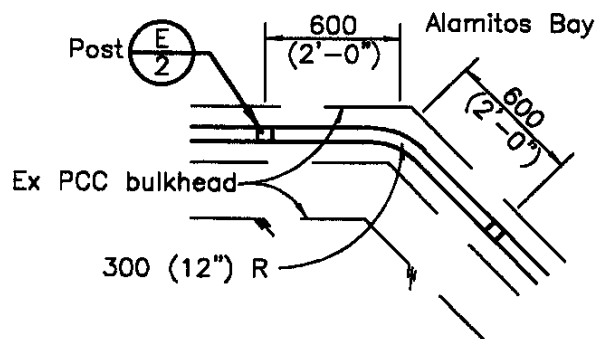
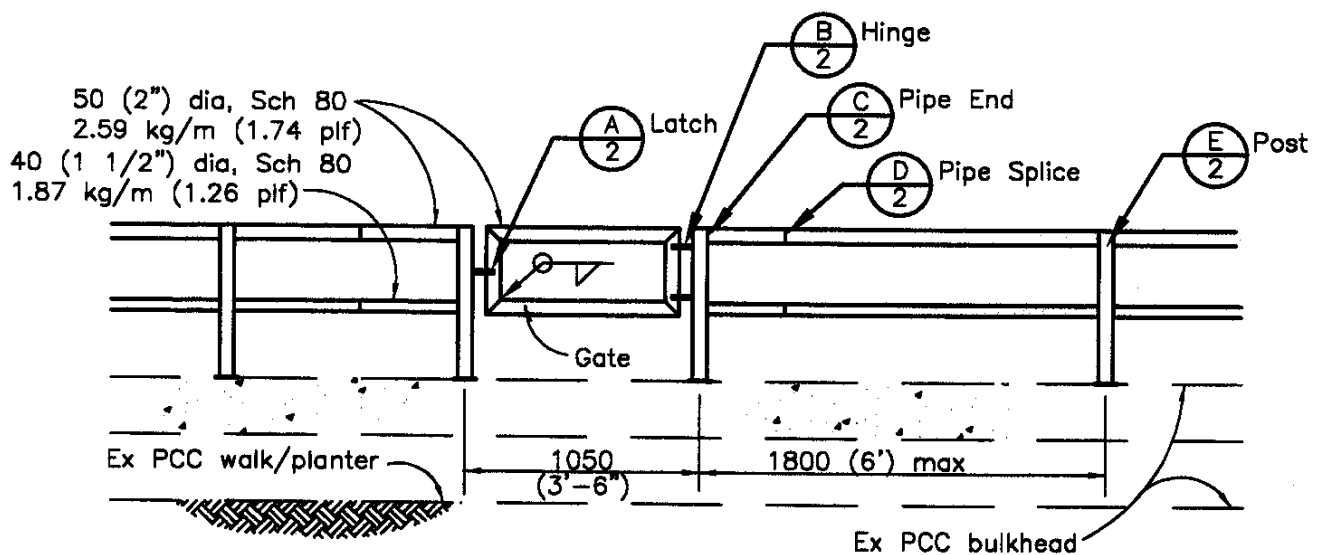


**SECTION**



**DETAIL AT BULKHEAD CORNER  
PLAN VIEW**



**TYPICAL ELEVATION**

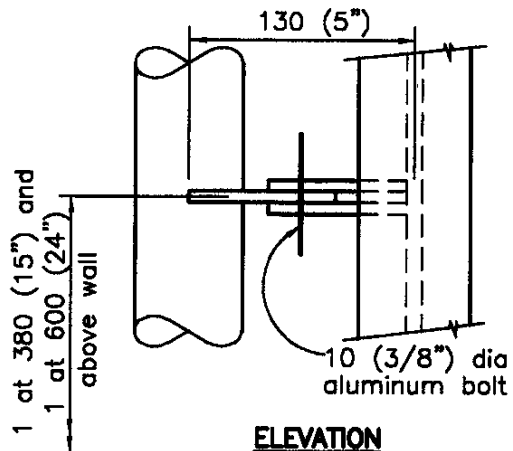
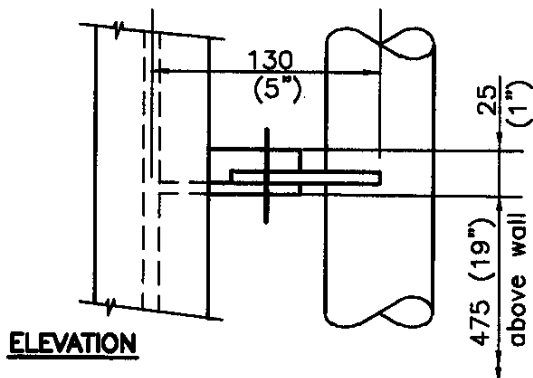
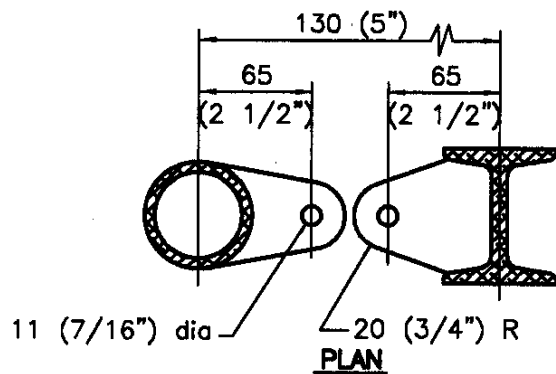
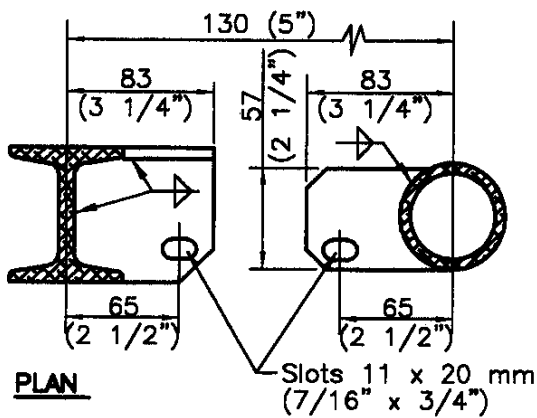
**NOTES:**

1. All handrail shall be aluminum, type 6063-T6, anodized after fabrication.
2. Aluminum shall be isolated from direct contact with concrete by fiber gaskets or approved coatings.
3. Gates shall be constructed to open landward.
4. Hinges, latches and post bases shall be 6 mm (1/4") aluminum plate. Posts may be weld fabricated, as shown.
5. Anodizing shall conform to Aluminum Association specification C22 and A42, Type 3, architectural Class I hard coat, 0.02 mm (0.7 mil) thick. Color shall match existing (ALCOA Duranodic Medium Bronze).

Ref: B-2202, Sht. 7

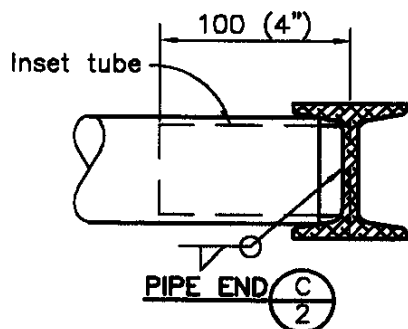
All dimensions are millimeters  
except as noted.

REVISIONS		CITY OF LONG BEACH, CALIFORNIA DEPARTMENT OF PUBLIC WORKS	STANDARD PLAN NO.  METRIC 801
NO.	DATE		
1	05/06/98	NAPLES ISLAND BULKHEAD HANDRAIL	
2	12/23/02		
3		APPROVED BY: <u>Mark Anttila</u> CITY ENGINEER R.E. No. <u>40589</u>	SHEET  1 OF 2
4			
		DATE: <u>1/10/03</u> EX. DATE <u>03/31/03</u>	

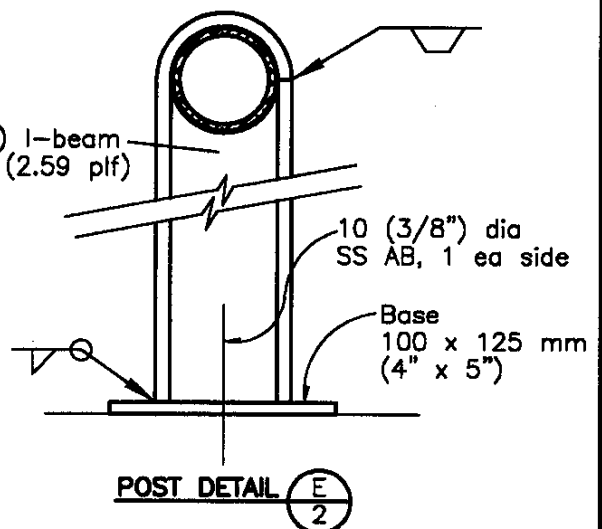
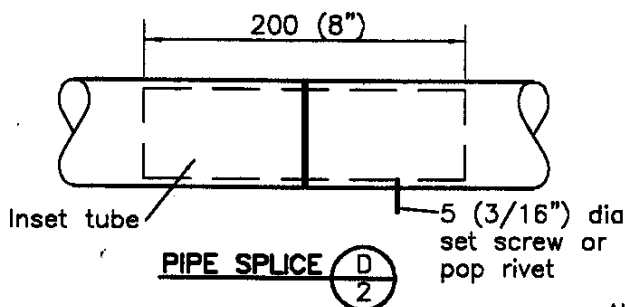


LATCH DETAIL (A/2)

HINGE DETAIL (B/2)

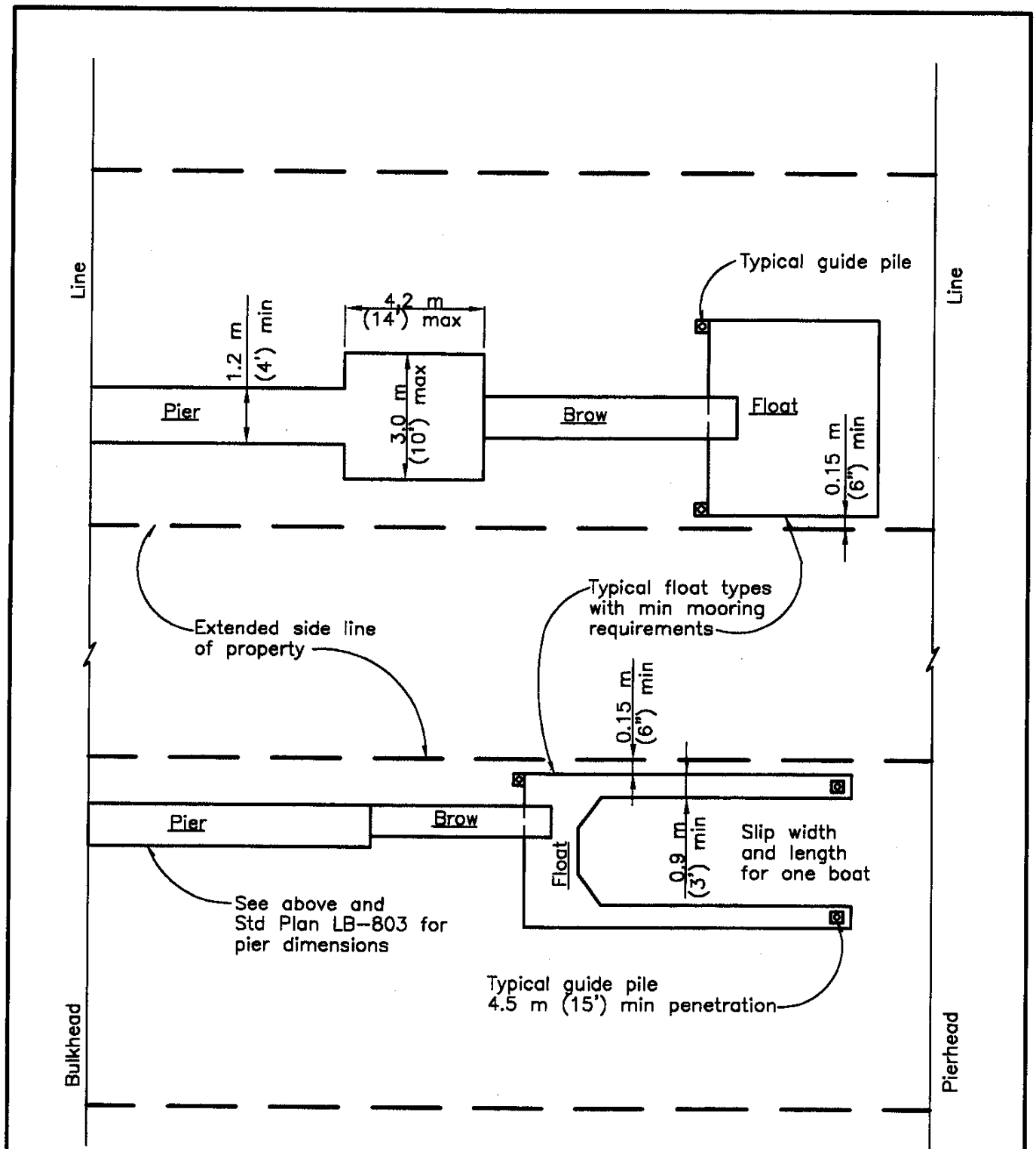


75 mm (3") I-beam  
3.86 kg/m (2.59 plf)



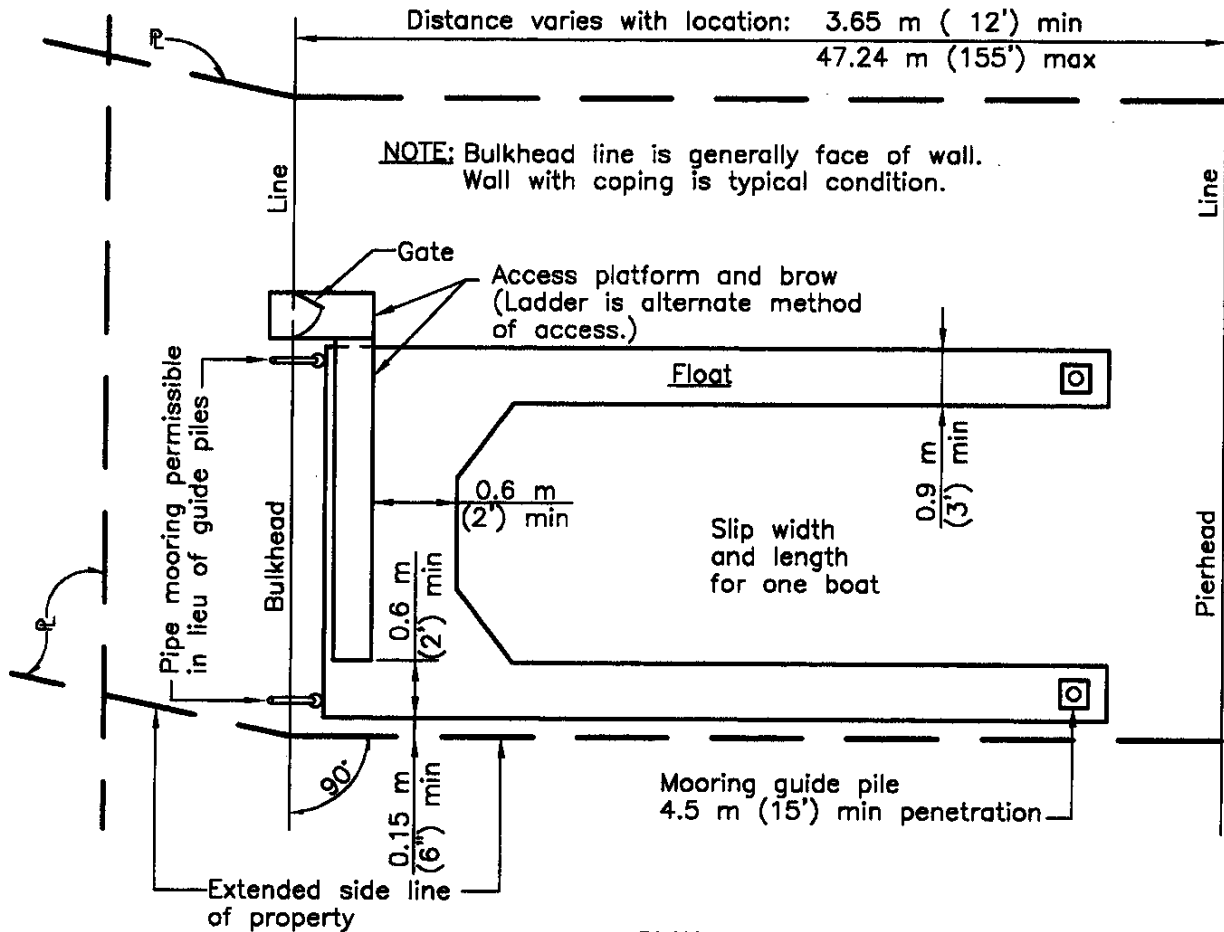
All dimensions are in millimeters, except as noted

REVISIONS		CITY OF LONG BEACH, CALIFORNIA DEPARTMENT OF PUBLIC WORKS		STANDARD PLAN NO.
NO.	DATE			
1	05/06/98	NAPLES ISLAND BULKHEAD HANDRAIL		METRIC 801
2	12/23/02			
3		APPROVED BY: <i>Mark Chittell</i> CITY ENGINEER R.E. No. 40599		SHEET 2 OF 2
4				
		DATE: 1/10/03 EX. DATE: 03/31/03		

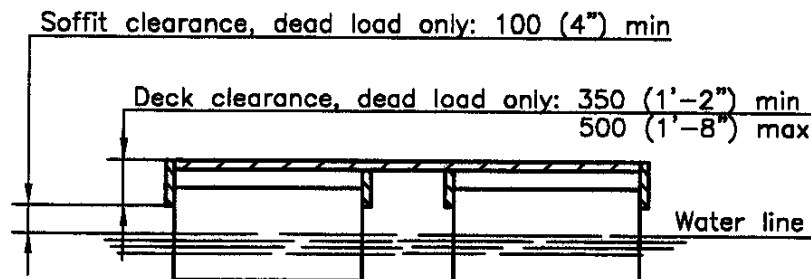


All dimensions are millimeters except as noted.

<b>REVISIONS</b>		<b>CITY OF LONG BEACH, CALIFORNIA</b>		<b>STANDARD PLAN NO.</b>
<b>NO.</b>	<b>DATE</b>	<b>DEPARTMENT OF PUBLIC WORKS</b>		
1	05/06/98	<b>PIER AND FLOAT LAYOUT</b>		<b>METRIC</b>
2	12/23/02			<b>802</b>
3				<b>SHEET</b>
4				<b>1 OF 2</b>
APPROVED BY: <i>Mark Chittell</i>		DATE: <i>1/10/03</i>		
CITY ENGINEER R.E. No. <i>40599</i>		EX. DATE <i>03/31/03</i>		



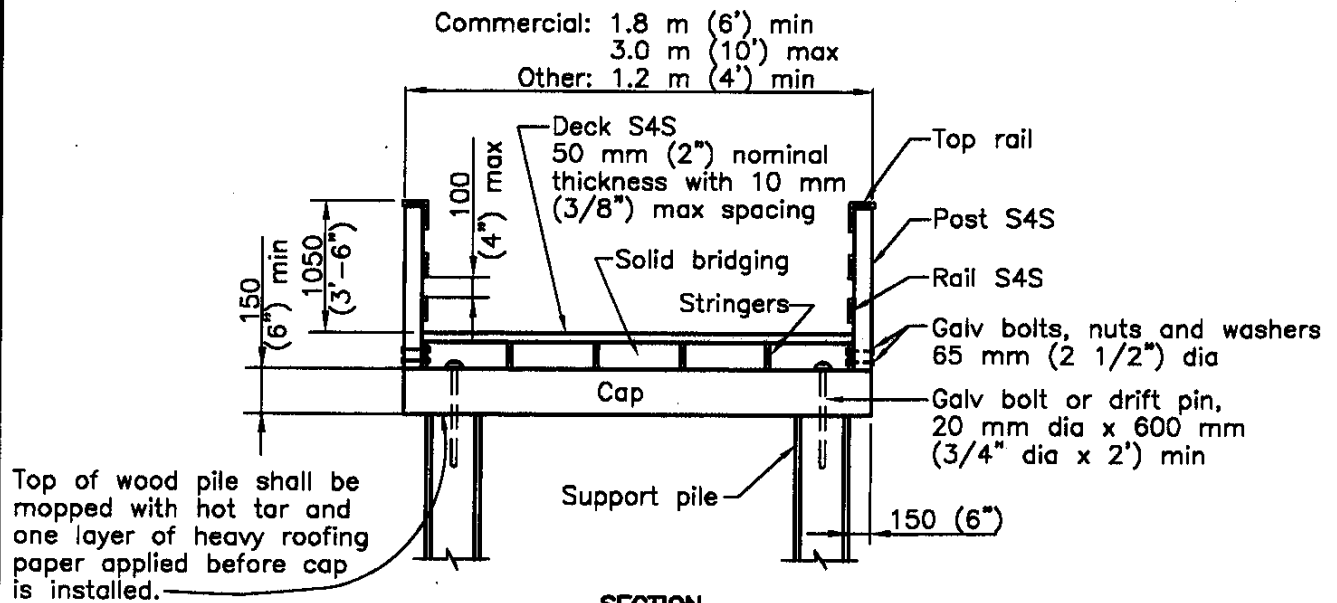
**PLAN**



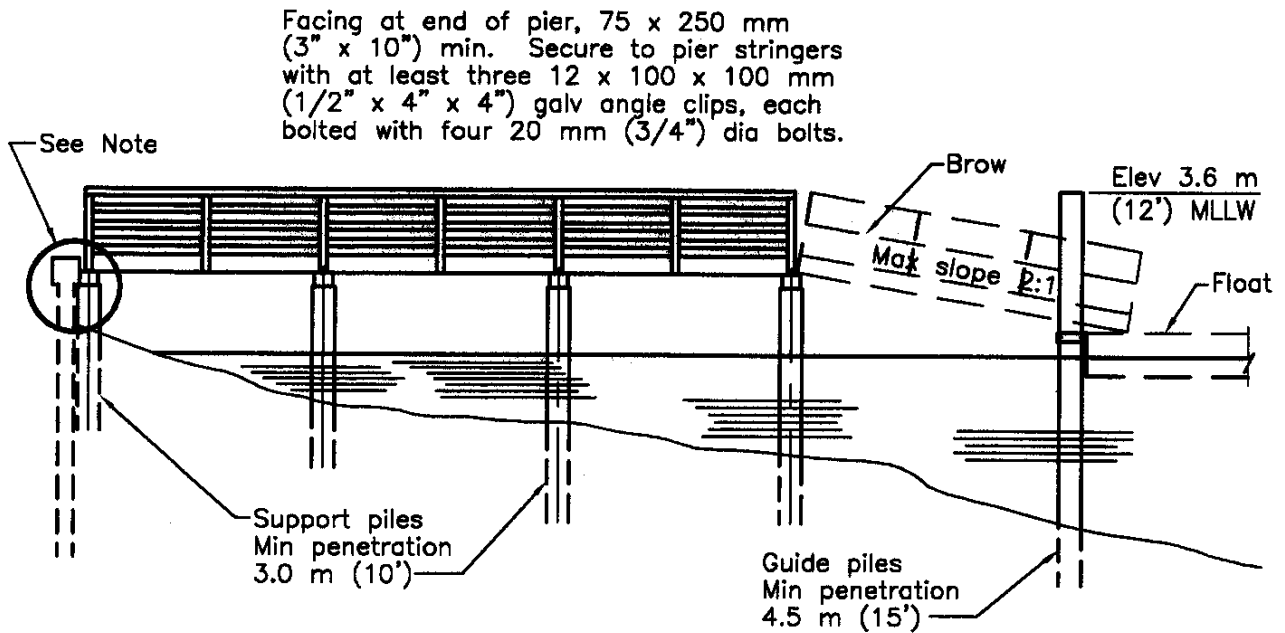
**SOFFIT AND DECK CLEARANCES  
FOR ALL FLOATS**

All dimensions are millimeters  
except as noted.

REVISIONS		CITY OF LONG BEACH, CALIFORNIA DEPARTMENT OF PUBLIC WORKS	STANDARD PLAN NO.
NO.	DATE		
1	05/06/98	PIER AND FLOAT LAYOUT	METRIC 802
2	12/23/02		
3			
4			
APPROVED BY: <u>Mal Chittell</u>		DATE: <u>1/10/03</u>	SHEET 2 OF 2
CITY ENGINEER R.E. NO. <u>40599</u>		EX. DATE <u>03/31/03</u>	



**SECTION**



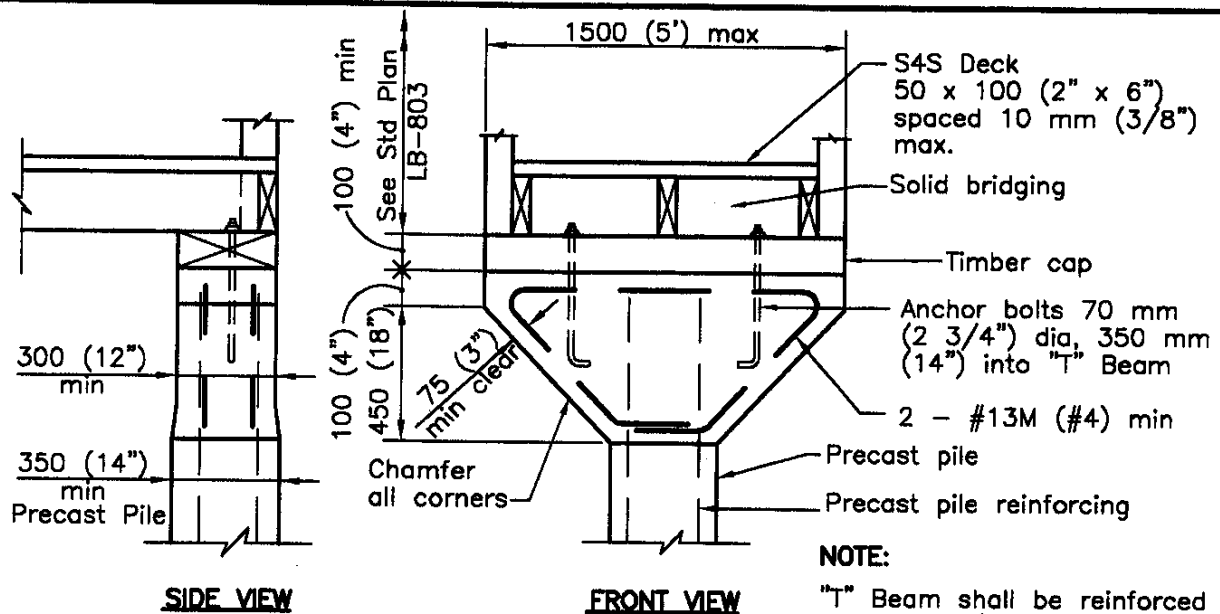
**ELEVATION**

**NOTE:**

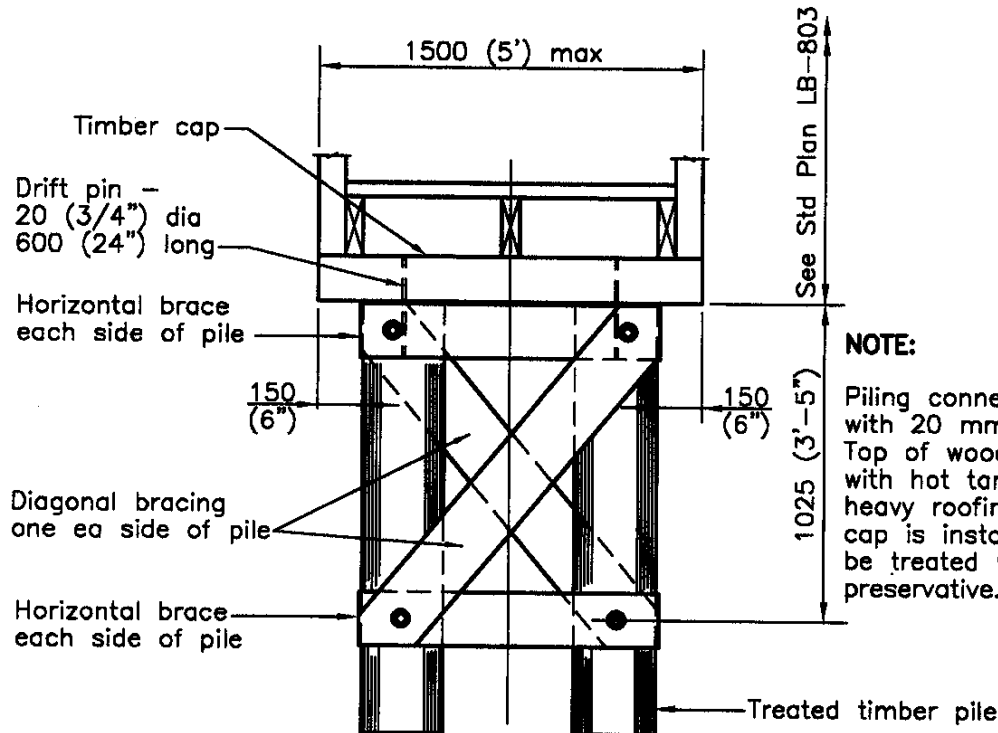
1. Other methods of supporting inshore end may be approved if permit application plans show full design details. Only vertical loads may be imposed on City bulkheads.

All dimensions are millimeters except as noted.

<b>REVISIONS</b>		<b>CITY OF LONG BEACH, CALIFORNIA</b> DEPARTMENT OF PUBLIC WORKS	<b>STANDARD PLAN NO.</b>
<b>NO.</b>	<b>DATE</b>		<b>METRIC 803</b>
1	05/07/98	<b>PIER INSTALLATION</b>	<b>SHEET 1 OF 1</b>
2	12/23/02		
3		<b>APPROVED BY:</b> <i>Mal Duffell</i>	<b>DATE:</b> 1/10/03
4		CITY ENGINEER R.E. No. 40599	EX. DATE 03/31/03



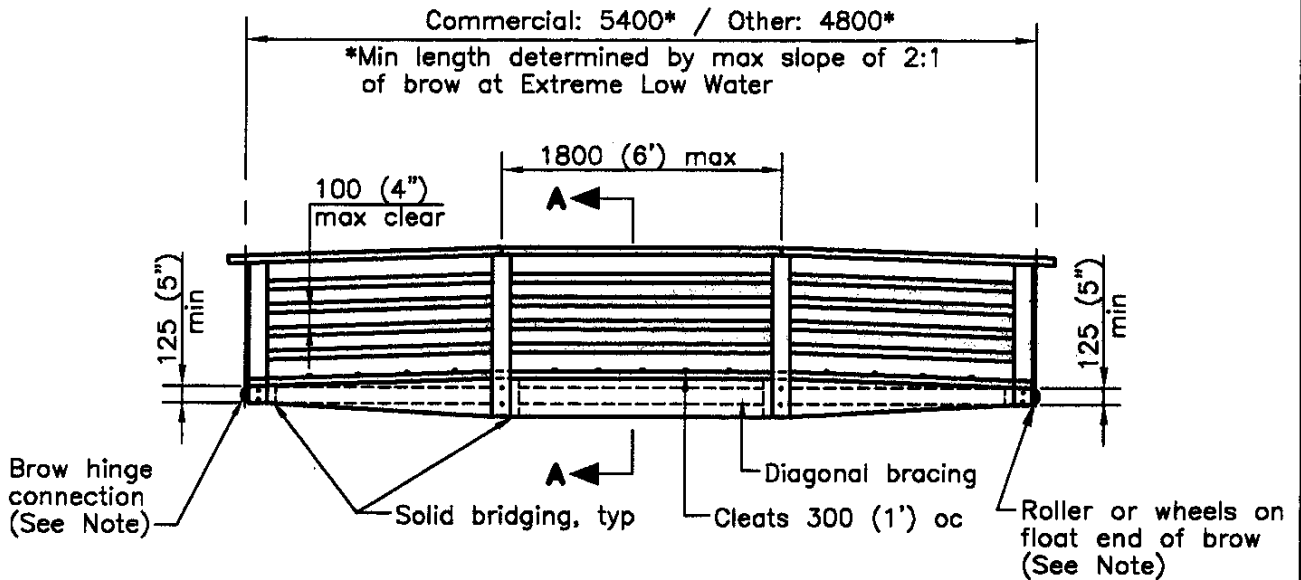
**OPTION No. 1**



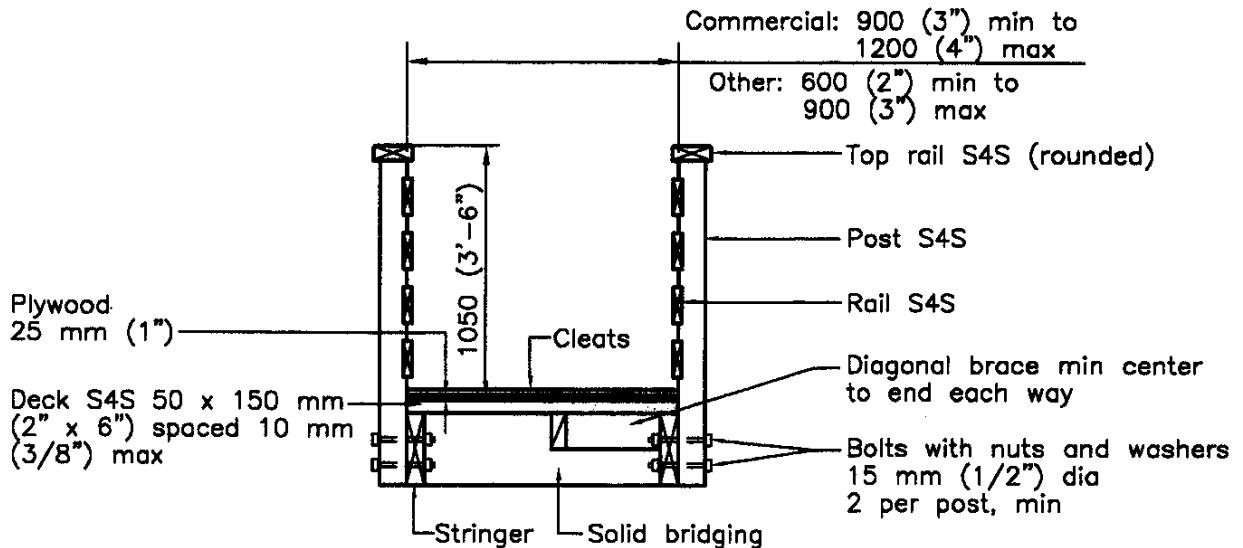
**OPTION No. 2**

All dimensions are millimeters except as noted.

REVISIONS		CITY OF LONG BEACH, CALIFORNIA DEPARTMENT OF PUBLIC WORKS	STANDARD PLAN NO.
NO.	DATE		
1	05/07/98	OPTIONAL SUPPORT SYSTEMS FOR NARROW PIERS	METRIC 804
2	12/23/02		
3		APPROVED BY: <i>Mark Chittell</i> CITY ENGINEER R.E. No. 40599	SHEET 1 OF 1
4			
		DATE: 1/10/03 EX. DATE: 03/31/03	



**ELEVATION**



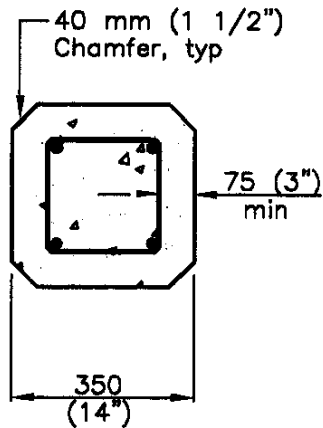
**SECTION A-A**

**NOTE:**

Brow hinge connection and float end connection shall be provided with steel bearing plates to transfer load to stringers.

All dimensions are millimeters except as noted.

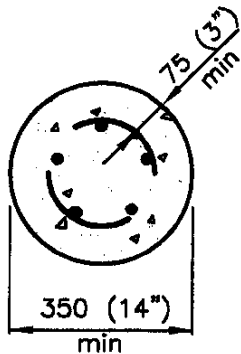
REVISIONS		CITY OF LONG BEACH, CALIFORNIA DEPARTMENT OF PUBLIC WORKS		STANDARD PLAN NO.
NO.	DATE			
1	05/07/98	BROW		METRIC 805
2	12/23/02			
3		APPROVED BY: <i>Mark A. [Signature]</i> CITY ENGINEER R.E. No. 40599		SHEET 1 OF 1
4				
		DATE: 1/10/03 EX. DATE: 03/31/03		



## SQUARE CONCRETE PILE

### Minimum Reinforcing:

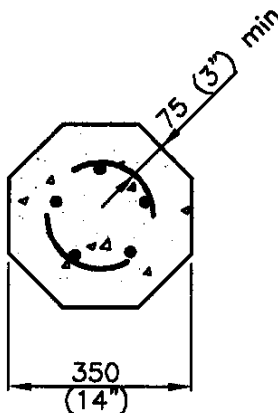
4 prestressed strands, 13 mm (1/2") dia 1.2 MN (270 kip), with #16M (#5) ties at 225 mm (9") pitch



## ROUND CONCRETE PILE

### Minimum Reinforcing:

5 prestressed strands, 13 mm (1/2") dia 1.2 MN (270 kip), with #16M (#5) ties at 225 mm (9") pitch



## OCTAGONAL CONCRETE PILE

### Minimum Reinforcing:

5 prestressed strands, 13 mm (1/2") dia 1.2 MN (270 kip), with #16M (#5) ties at 225 mm (9") pitch

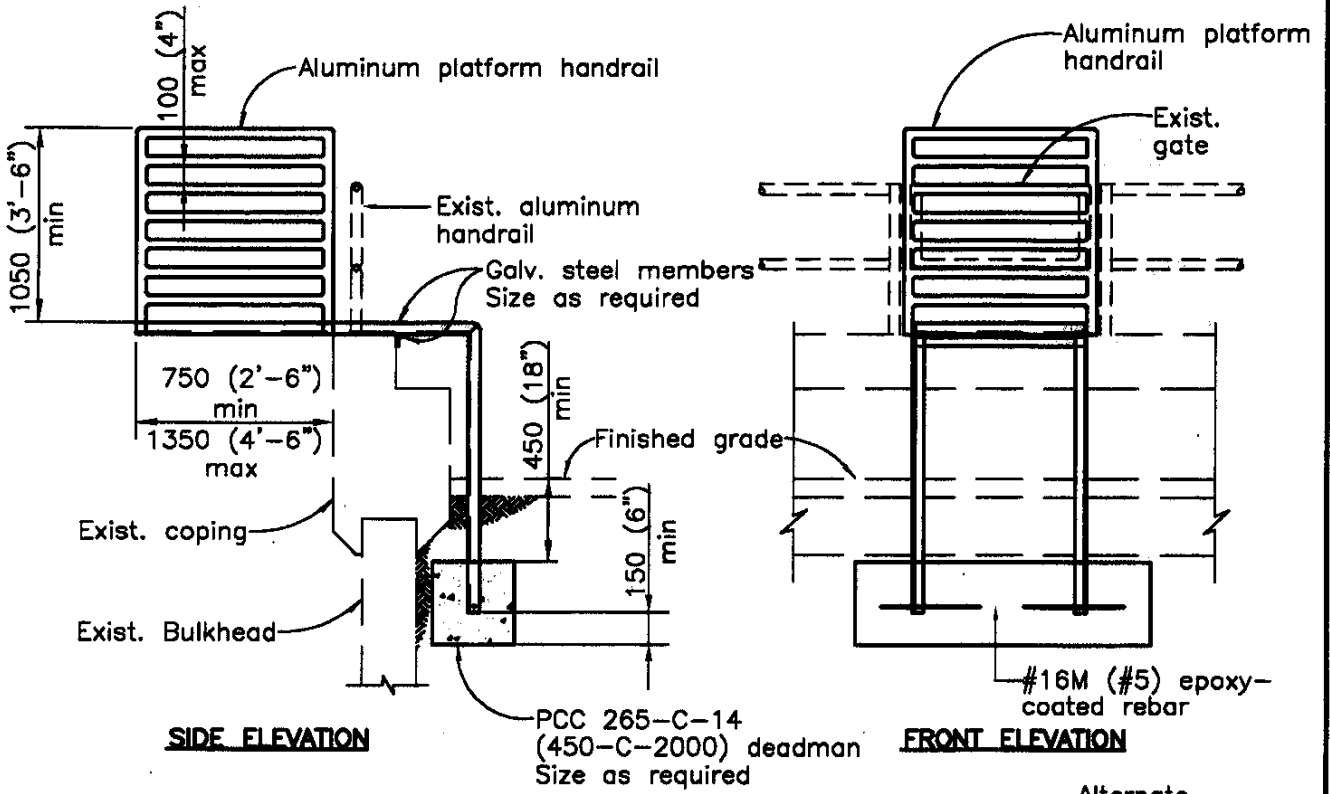
### NOTES:

1. All piles shall be precast and prestressed.
2. Additional tie reinforcing shall be provided near ends of piles. Prestressed piles shall have  $f'c = 35 \text{ MPa}$  (5000 psi) minimum. Piles shall be designed by an engineer licensed in the State of California.

All dimensions are millimeters except as noted.

<b>REVISIONS</b>		<b>CITY OF LONG BEACH, CALIFORNIA</b> DEPARTMENT OF PUBLIC WORKS	<b>STANDARD PLAN NO.</b>
<b>NO.</b>	<b>DATE</b>		<b>METRIC</b>
1	12/23/02	<b>PRECAST PILES</b>	<b>806</b>
2			
3			
4			
APPROVED BY: <i>Mark Chittell</i>		DATE: <i>1/10/03</i>	<b>SHEET</b>
CITY ENGINEER R.E. NO. 40599		EX. DATE 03/31/03	<b>1 OF 1</b>

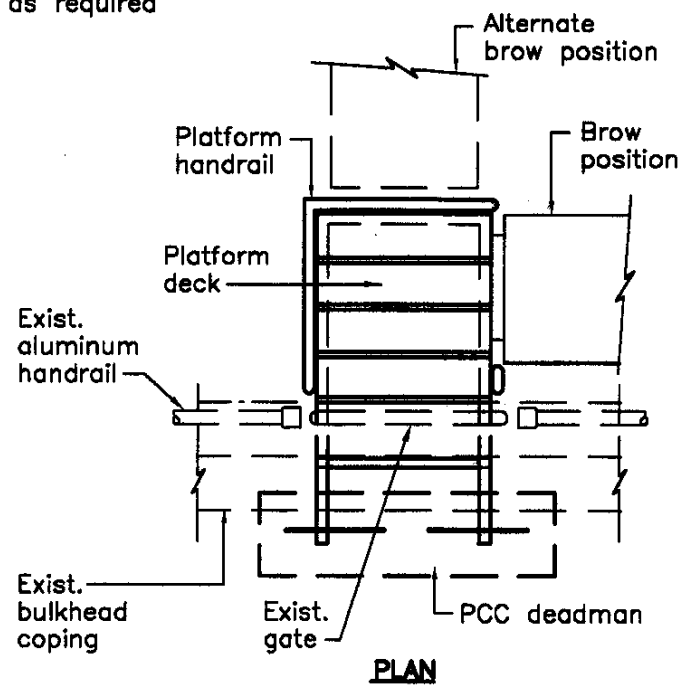




**NOTES:**

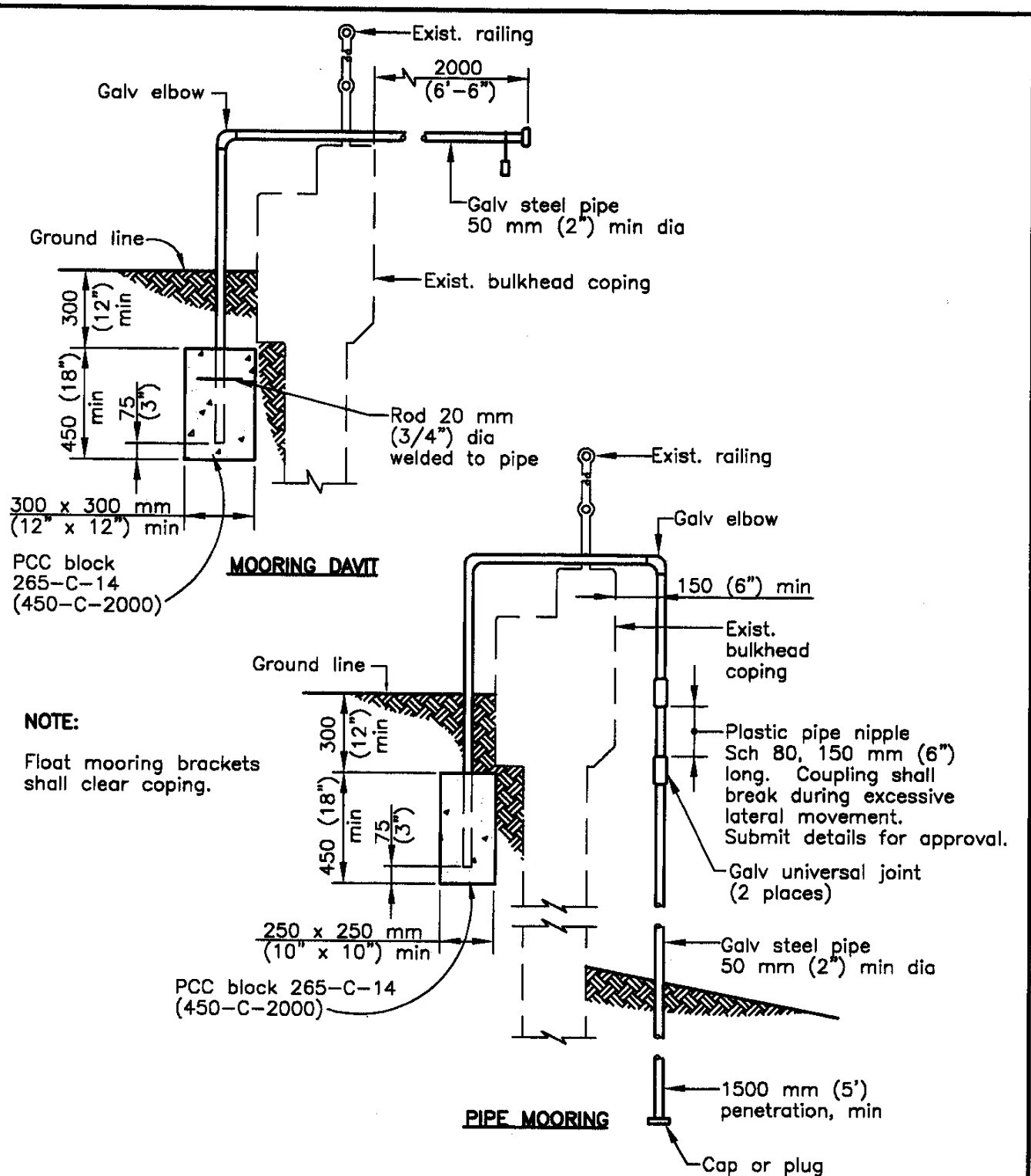
No modification or attachment shall be made to existing handrail or gate.

Calculations shall be submitted with design to verify member sizes.



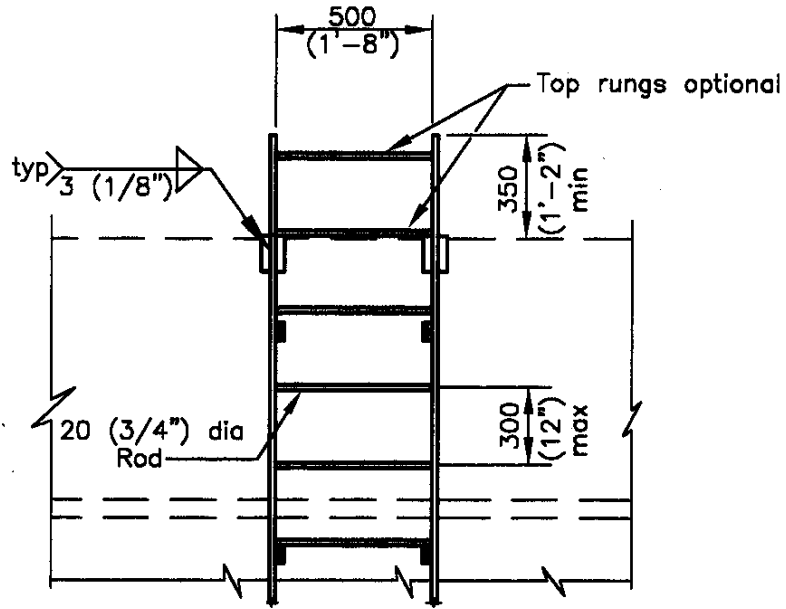
All dimensions are millimeters except as noted.

REVISIONS		CITY OF LONG BEACH, CALIFORNIA DEPARTMENT OF PUBLIC WORKS		STANDARD PLAN NO.
NO.	DATE			
1	06/10/98	FLOAT ACCESS PLATFORM		METRIC 807
2	12/23/02			
3		APPROVED BY: <i>Mark Chaffin</i> CITY ENGINEER R.E. No. 40599		SHEET 1 OF 1
4				
		DATE: 1/10/03 EX. DATE: 03/31/03		

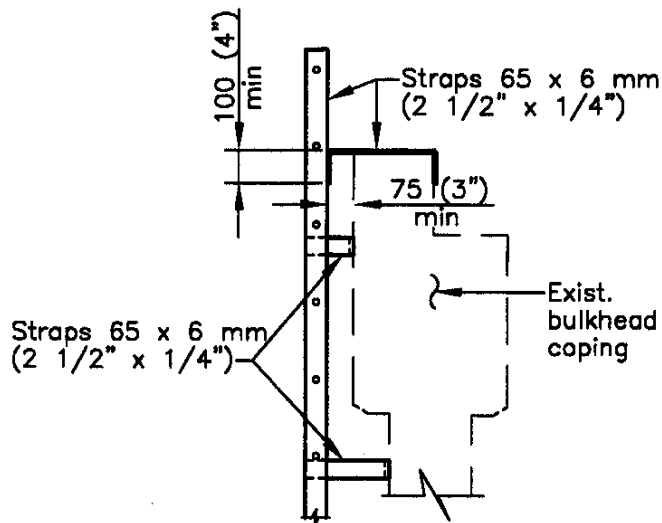


All dimensions are millimeters except as noted.

REVISIONS		CITY OF LONG BEACH, CALIFORNIA DEPARTMENT OF PUBLIC WORKS		STANDARD PLAN NO.
NO.	DATE			
1	12/23/02	PIPE MOORINGS AND DAVITS		METRIC 808
2				
3				
4		APPROVED BY: <i>Mark A. [Signature]</i> CITY ENGINEER R.E. No. 40599		SHEET 1 OF 1
		DATE: 1/10/03 EX. DATE: 03/31/03		



**FRONT VIEW**



**SIDE VIEW**

All dimensions are millimeters except as noted.

REVISIONS		CITY OF LONG BEACH, CALIFORNIA DEPARTMENT OF PUBLIC WORKS		STANDARD PLAN NO.
NO.	DATE			
1	06/10/98	WELDED STEEL LADDER		METRIC 809
2	12/23/02			
3		APPROVED BY: <i>Mal Chittell</i> CITY ENGINEER R.E. No. 40599		SHEET 1 OF 1
4				
		DATE: 1/10/03 EX. DATE 03/31/03		